

REMARKS

Claims 18-25 and 31-34 have been rejected under 35 U.S.C. §102(e) as anticipated by Machii et al (Published U.S. Patent Application No. 2005/0159887), while Claims 26-29 have been rejected under 35 U.S.C. §103(a) as unpatentable over Machii et al in view of Jenkins et al (Published U.S. Patent Application No. 2001/0018628); and Claim 30 has been rejected as unpatentable over Machii et al and Jenkins et al, and further in view of Adachi (Published U.S. Patent Application No. 2008/0198043). However, for the reasons set forth hereinafter, Applicants respectfully submit that all claims of record in this application, including new Claims 35-37, distinguish over the cited references, whether considered separately or in combination.

The present invention is directed to a sensor arrangement device for operating vehicle control systems of a vehicle, such as, for example, a radar supported automatic headway control system, a gear change adaptation system, an anticipated curve warning system, a system for forward deflection of vehicle headlights depending on road curvature, a system for warning of approaching no-passing zones, and the like. (See, for example, paragraphs [0026] and [0027].) One important feature of such systems is that the amount of geographic information which they require in order to perform their assigned functions is much less than that of a vehicle navigation system. For instance, as shown in

Figure 1 of the present application, the geographic information contained in a vehicle navigation data base typically includes information such as addresses (21% of the total) and polygons related to information which is to be visualized during navigation (21%). In addition, as shown in Figures 2a and 2b, navigation system databases typically include a large portion of data which characterize built-up areas, which include local streets and stop lights. The systems of the type mentioned previously, however, are intended to operate most effectively in open or undeveloped areas, so that the data concerning built-up areas are not necessary.

Accordingly, the use of geographic information stored in a digital road map for a navigation system requires the incorporation of substantial unnecessary hardware and software into the vehicle system, and may even require the provision of a complete navigation system, in order to extract the information necessary for operating vehicle operating systems. Thus, such a system is inefficient and costly.

The present invention, on the other hand, provides a sensor arrangement for a vehicle control system which includes a buffer for storing "geographic vehicle operation information", as well as an input interface for selecting a subset of the geographic vehicle operation information stored in the buffer and an output for outputting a selected subset of geographic vehicle operation

information, which is sent for further processing to the vehicle control system. In addition, Claim 18 further recites that the geographic vehicle operation information referred to therein "consists of geographic information that is limited to controlling operation of at least one vehicle control system as the vehicle traverses at least one possible route".

Thus, as noted in paragraph [0011] of the specification, in the system according to the invention, a complete separation is achieved between geographic information provided for use in vehicle control systems on the one hand and the much more voluminous geographic information used for navigation on the other hand. (See also paragraph [0013].) The latter feature of the invention is not taught or suggested in the Machii et al patent, which discloses a terminal apparatus for local storage of map information in a vehicle navigation system. In particular, as illustrated in Figures 1 and 2 of Machii et al, a local terminal 106 that is contained on board a vehicle includes a provision for interfacing with a memory card 201 that is insertable in a slot 404 in a terminal apparatus main body 401. As shown in Figure 1, the PC 105, in turn, is connected via a telephone link 104 and the internet 103 to a navigation server 102, in which an overall navigation map is stored. (See paragraphs [0044] and [0045].)

As shown in Figure 3, and discussed in paragraph [0051] of the specification, when a map of a particular locality is requested (by indicating

coordinates, such as latitude and longitude of a desired place), a check is made whether or not the requested information exists locally. If so, the requested map is loaded from the memory card 201 or provided in the terminal apparatus 106. If not, on the other hand, the map data is downloaded from the navigation server 102 of Figure 2. (See paragraph [0051], lines 5-9, as well as paragraph [0086]. In this manner, it is possible to minimize the amount of data from the navigation database which is stored locally on board the vehicle.

As is apparent from the foregoing brief summary, Machii et al discloses a vehicle navigation system that uses a navigation database stored in the navigation computer 102, as indicated, for example, in Figure 2. More specifically, Machii et al contains no teaching or suggestion regarding the storage of a database which is specially configured to provide only that information which is necessary for controlling the operation of a vehicle control systems, such as noted previously. Rather, the navigation database in Machii et al includes such information as “points of interest and a points of interest management section 1103, as a well as a registered place information section 1104, a guidance point creation section 1106, etc.” (See Figure 11 and paragraph [0068]. Machii et al makes no mention of vehicle operating systems such as referred to in independent Claims 1 and 35, or to the maintenance of a database of “geographic vehicle operation information”, such as defined in Claims 18 and 35, which “consists of” geographic information “that is limited to controlling

operation of at least one vehicle control system". Indeed, Machii et al contains no teaching or suggestion of using the navigation data base provided therein for such control purposes, and as is apparent from the foregoing discussion, the use of such a navigation database for controlling such systems is antithetical to the structure and function of the present application.

The Jenkins et al patent, on the other hand, is cited only in respect of Claims 26-29, as disclosing an impact fee calculator. Adachi, on the other hand, is cited only as teaching that a non straight parameter based section of a road is described as a circular arc, clothoid, or spline. Accordingly, insofar as Applicants have been able to determine, neither of the latter references teaches or suggests those features of the invention which are omitted in the Machii et al patent, as discussed above.

In light of the foregoing remarks, this application should be in condition for allowance, and early passage of this case to issue is respectfully requested. If there are any questions regarding this amendment or the application in general, a telephone call to the undersigned would be appreciated since this should expedite the prosecution of the application for all concerned.

If necessary to effect a timely response, this paper should be considered as a petition for an Extension of Time sufficient to effect a timely response, and

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please charge any deficiency in fees or credit any overpayments to Deposit
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Respectfully submitted,



Gary R. Edwards
Gary R. Edwards
Registration No. 31,824

CROWELL & MORING LLP
Intellectual Property Group
P.O. Box 14300
Washington, DC 20044-4300
Telephone No.: (202) 624-2500
Facsimile No.: (202) 628-8844
GRE:kms
9771422_1